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10/599,063	09/19/2006	Kazuhisa Misono	JP920040033US1	3682
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RSW IP Law			TRUONG, CAMQUY	
IBM CORPORATION				
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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/599,063	Applicant(s) MISONO ET AL.	
	Examiner CAMQUY TRUONG	Art Unit 2196	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/19/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-16 are pending and they are presented for examination.
2. This Office action is in response to the amendment filed on 11/13/2011. This Action is made Final. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1, 3, 6-7, 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable by Kisor (U.S. 6,098,091) in view of Rashid et al. (U.S. 2004/0230661).**

Kisor was cited in the previous office action.

4. As to claim 1, Kisor teaches the invention as claimed including: a computer system for performing grid computing with a plurality of computers connected through a network (Fig. 1), the computer system comprising:
a center server (central computer 104, col. 2, line 24; col. 3, line 45) for requesting the computers on the network to execute a job (distributing tasks from a

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central computer to remote computers over wire area network, col. 2, lines 58-60; col. 3, line 61 – col. 4, line 3); and

a process server, which is one of the plurality of computers, (remote computers) for executing the job in response to a request from the center server (task assigned to remote computers to be completed, col. 4, lines 1-2; col. 4, lines 48-50);

wherein the center server comprises:

a scheduler section (the scheduler 228, col. 4, lines 44-45) which assigns a job to be executed to the process server (the scheduler 228 organizes task 232 that need to be completed with the resource available information 224 transmitted by the remote computer 208, col. 4, lines 44-48 / assign assignment tasks to be completed to the appropriate remote computers, col. 4, line 51 –col. 5, line 17; col. 6, lines 16-20) and issues a job execution request (the management program will follow scheduler instructions (job execution request) and will send the assigned task to the remote computer, col. 5, lines 50-52); and

an agent section (management program 144, col. 3, line 61) which manages information about the process server (the management program 144 polls the remote computers 108, 112, 116 and 120 as to times of day when the remotes are available, col. 3, lines 61-67), receives the job execution request issued by the scheduler section, and sends the job execution request to the process server to which the requested job has been assigned (the central computer using the management program will follow scheduler instructions and will send the assigned task to the remote computer, col. 5, lines 50-53; col. 2, lines 24-30).

Kisor does not explicitly teach sends the job execution request to process server in a manner selected to accommodate an access type of the process server. However, Rashid teaches sends the job execution request to process server in a manner selected to accommodate an access type of the process server (If a notification is detected by the application, either in push operation step (303) or in poll operation step (306), the application proceeds to step (307) in which a notification handler is selected to process the notification message, based on the notification type, paragraph [0034]).

It would have been obvious to one of ordinary skill in the art at the time invention was made to incorporate the teaching of sends the job execution request to process server in a manner selected to accommodate an access type of the process server as taught by Rashid into Kisor because the making use of pre-encoded rules (pushing and polling) into the notifications/tasks would eliminate the need for formatting or interpreting the data; thereby, improve system performance.

5. As to claim 3, Kisor teaches the agent section obtains information about the capacity and operating status of the process server corresponding to the agent section from the process server and manages the information (sending to reply indicating available time and computational capabilities of said remote computer, col. 8, lines 4-12; col. 3, line 61 – col. 4, line 3), and the scheduler section assigns the job to the process server on the basis of the information managed by the agent section (the scheduler 228 organizes task 232 that need to be completed with the resource available information 224 transmitted by the remote computer 208, col. 4, lines 44-48

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/ assign assignment tasks to be completed to the appropriate remote computers, col. 4, line 51 –col. 5, line 17; col. 6, lines 16-20; col. 8, lines 12-16).

6. As to claim 6, it is rejected for the same reason as claim 1 above.

7. As to claim 7, Kisor teaches the agent section is provided for each of computers constituting the grid computing system (Fig. 1 shows program 144 is provided for remote computers 108, 112, 115 and 120/ management program 144 contains instructions executed by the central computer which polls the remote computers 108, 112, 116 and 120, col. 3, lines 61-63) and makes the request for execution of the job by using an individual communication scheme established between the agent section and a corresponding computer (the central computer using the management program will follow scheduler instructions and will send the assigned task to the remote computer, col. 5, lines 50-53).

8. As to claim 9, Kisor teaches a server for scheduling jobs and requesting execution of the jobs in a grid computing system (col. 2, lines 25-30), the server comprising:

a processor (central computer 104, col. 3, line 19-20); and

a memory (random access memory 128, col. 3, line 30) operably connected to the processor, and having encoded thereon instructions executable by the processor (col. 3, lines 45-46), comprising:

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an agent section which manages information about the capacity and operating status of a computer constituting the grid computing system (the management program 144 polls the remote computers 108, 112, 116 and 120 as to times of day when the remotes are available, col. 3, lines 61-67/ sending to reply indicating available time and computational capabilities of said remote computer, col. 8, lines 4-12), relays communication with the computer, and performs transmission and reception (the management program will follow scheduler instructions and will send the assigned task to the remote computer, col. 5, lines 50-53/ at a schedule time when the remote computer is available to operate in the contractor relationship, the central computer ... transfers the instructions and data necessary for the remote computer to complete the task, col. 6, lines 31-35/ inform the central computer on the completion of the task, col. 6, lines 53-55); and

a scheduler section which assigns, on the basis of the information managed by the agent section, a job to be executed by the computer (the scheduler 228 organizes task 232 that need to be completed with the resource available information 224 transmitted by the remote computer 208, col. 4, lines 44-48 / assign assignment tasks to be completed to the appropriate remote computers, col. 4, line 51-col. 5, line 17; col. 6, lines 16-20), and requests the computer to which the job has been assigned to execute the job through the agent section (the central computer using the management program will follow scheduler instructions and will send the assigned task to the remote computer, col. 5, lines 50-53).

Kisor does not explicitly teach performs transmission according to an access type of the computer. However, Rashid teaches sends performs transmission according to an access type of the computer (If a notification is detected by the application, either in push operation step (303) or in poll operation step (306), the application proceeds to step (307) in which a notification handler is selected to process the notification message, based on the notification type, paragraph [0034]).

It would have been obvious to one of ordinary skill in the art at the time invention was made to incorporate the teaching of sends the job execution request to process server in a manner selected to accommodate an access type of the process server as taught by Rashid into Kisor because the making use of pre-encoded rules (pushing and polling) into the notifications/tasks would eliminate the need for formatting or interpreting the data; thereby, improve system performance.

9. As to claim 13, it is rejected for the same as claim 1 above, In addition, Kisor teaches a computer program product, comprising a computer readable non-transitory storage medium having encoded thereon:

computer instructions for storing in recording means and managing information about a process server which constitutes a grid computing system (Fig. 1 shows central computer connects to remote computers) (Fig. 3B shows resource available file 308, col. 4, line 53 – col. 5, line 11) and executes a job (tasks assigned to remote computers to be completed, col. 4, lines 1-2);

computer instructions for assigning a job to be executed to the process server on the basis of information about the process server (the scheduler 228 organizes task 232 that need to be completed with the resource available information 224 transmitted by the remote computer 208, col. 4, lines 44-48 / assign assignment tasks to be completed to the appropriate remote computers, col. 4, line 51-col. 5, line 17; col. 6, lines 16-30) and issuing a job execution request (the management program will follow scheduler instructions (job execution request) and send the assigned task to the remote computer, col. 5, lines 50-53); and

computer instructions for receiving the issued request and sending the request to the process server to which the requested job has been assigned (the central computer using the management program will follow scheduler instructions and will send the assigned task to the remote computer, col. 5, lines 50-53).

Kisor does not explicitly teach sends the job execution request to process server in a manner selected to accommodate an access type of the process server. However, Rashid teaches sends the job execution request to process server in a manner selected to accommodate an access type of the process server (If a notification is detected by the application, either in push operation step (303) or in poll operation step (306), the application proceeds to step (307) in which a notification handler is selected to process the notification message, based on the notification type, paragraph [0034]).

It would have been obvious to one of ordinary skill in the art at the time invention was made to incorporate the teaching of sends the job execution request to process server in a manner selected to accommodate an access type of the process server as

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taught by Rashid into Kisor because the making use of pre-encoded rules (pushing and polling) into the notifications/tasks would eliminate the need for formatting or interpreting the data; thereby, improve system performance.

10. Claims 2, 4, 8, 10-11 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kisor (U.S. 6,098,091) in view of Rashid (U.S. 2004/0230661), as applied to claims 1, 7, 9 and 13 above further in view of Akashi et al. (U.S. 2002/0198924).

Akashi was cited in the previous office action.

11. As to claim 2, the combination Kisor and Mohamed do not explicitly teach plurality of process servers and each of the plurality of process servers is provided with a separate agent section the agent section. However, Akashi teaches the system comprises a plurality of process servers and each of the plurality of process servers is provided with a separate agent section the agent section (Fig. 1 shows each computer 110 -1 to 110-m has associated cluster node scheduler).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of plurality of process servers and each of the plurality of process servers is provided with a separate agent section the agent section as disclosed by Akashi into the combination of Kisor and Rashid 's system because these systems are directing to the system that is capable of apportioning tasks among computer connected via wide area networks, and by incorporating the teaching of Akashi would improve the combination of Kisor and Rashid's system by allowing

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each cluster node schedulers to assign each process to a corresponding computer from among the computers; thereby, improving the performance of the computer system.

12. As to claim 4, Kisor teaches wherein the scheduler section issues at least two job execution requests assigned to different process servers (the central computer assigns the tasks to particular remote computers, col. 6, lines 16-17) and at least one agent section sends a first job execution request received from the scheduler section to the corresponding process server in response to polling access from the corresponding process server (the information in resource available file 308 was transmitted by the remote computers to central computer, col. 5, lines 20-22).

Akashi teaches at least one second agent section sends a second job execution request received from the scheduler section to the corresponding process server in a push type scheduling scheme at timing managed by the second agent section (assigning each process to each of the processors performance measuring, paragraphs [0076] and [0077]).

13. As to claim 8, it is rejected for the same reason as claim 4 above.

14. As to claim 10, Akashi teaches separate agent section are provided for each of computers constituting the system (Fig. 1 shows each computer 110 -1 to 110-m has associated cluster node scheduler), and the scheduler section requests execution of

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a job through an agent section corresponding to a computer to which the job has been assigned (col. 5, line 54-col. 6, line 20).

15. As to claim 11, it is rejected for the same reason as claim 4. In addition, Kisor teaches the scheduler section assigns the job on the basis of information about the capacity of the computer stored in the agent section (Fig. 3B shows resource available file 308, col. 4, lines 53-56/ resource available information 224, col. 4, line 47/ the scheduler 228 organizes task 232 that need to be completed with the resource available information 224 transmitted by the remote computer 208, col. 4, lines 44-48 / assign assignment tasks to be completed to the appropriate remote computers using the resource available table, col. 4, line 51 –col. 5, line 17; col. 6, lines 16-22).

The combination Kisor and Rashid do not explicitly teach makes a request for execution of the job regardless of an access type of the computer to which the job has been assigned and sends a request for execution of a job issued by the scheduler section to at least some of the other computers at timing managed by the agent section. However, Akashi teaches makes a request for execution of the job regardless of the of an access type of the computer to which the job has been assigned (the cluster scheduler 250 sends process assignment information about a process, which will be executed in the computer, to each of the cluster node schedulers (240-1 through 240-3), paragraphs, [0076] and [0097]. Examiner interprets the disclosure above as the request

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for execution of the job regardless of the operating status of the computer to which the job has been assigned), and sends a request for execution of a job issued by the scheduler section to at least some of the other computers at timing managed by the agent (immediately before the cluster node schedulers assigning each process to each of the processors (220-11 through 220-34)/ each of the processors (220-11 through 220-12, . . . , 220-31 through 220-34) executes an assigned process, paragraphs [0070], [0076], [0110] and [0077]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of makes a request for execution of the job regardless of the operating status of the computer to which the job has been assigned and sends a request for execution of a job issued by the scheduler section to at least some of the other computers at timing managed by the agent section as disclosed by Akashi into the combination Kisor and Rashid's system because these systems are directing to the system that is capable of apportioning tasks among computer connected via wide area networks, and by incorporating the teaching of Akashi would improve the combination of Kisor and Rashid's system by allowing the system to send request at the timing managed; thereby, improving the performance of the computer system.

16. As to claim 14, Akashi teaches the computer instructions for sending a request to the process server send the request regardless of an operating status of the

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process server (cluster node characteristic information is held by the cluster scheduler 250, paragraph [0056]/ the cluster scheduler 150 has a function of assigning each process to one of the computers base on characteristic (capacity), paragraphs [0044], [0047], [0072] [0092]. Examiner interprets the disclosure above as the request for execution of the job regardless of the operating status of the computer to which the job has been assigned).

17. As to claim 15, Kisor teaches the computer instructions for sending the request to the process server cause the computer to send the request to at least a first one or a plurality of process servers in response to polling accesses from the process servers (the central computer polls the remote computers as to time of day the remote computers will be available and transmits the task to the assigned remote computers, col. 2, lines 24-30; col. 3, line 61-col. 4, line 3).

Akashi teaches send the request to at least a second one of a plurality of process servers at timing managed by the computer (immediately before the cluster node schedulers assigning each process to each of the processors (220-11 through 220-34)/ each of the processors (220-11 through 220-12, . . . , 220-31 through 220-34) executes an assigned process, paragraphs [0070], [0076], [0110] and [0077]).

18. **Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kisor (U.S. 6,098,091) in view of Rashid (U.S. 2004/0230661) further in view of**

Akashi et al. (U.S. 2002/0198924), as applied to claim 2 above, and further in view of Aziz et al. (U.S. 6,779,016).

Aziz was cited in the previous office action.

19. As to claim 5, Kisor teaches the agent sections send the request received from the scheduler section to the process servers connected in response to polling accesses from the process servers (the central computer using the management program will follow scheduler instructions and will send the assigned task to the remote computer, col. 5, lines 50-53/col. 2, lines 24-31). However, the combination of Kisor, Rashid and Akashi do not explicitly teach at least some of the process servers are connected to the center server through a firewall. However, Aziz teaches at least some of the process servers are connected to the center server through a firewall (each of the web servers coupled the load-balancer 112 and load-balancer 112 couple to a firewall, col. 2, lines 14-21; Fig. 1B).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of including at least some of the process servers are connected to the center server through a firewall as disclosed by Aziz into the combination of Kisor, Rashid and Akashi's system because it would improve the integrity of the combination of Kisor, Rashid and Akashi's system by protecting the web servers from unauthorized traffic.

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20. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kisor (U.S. 6,098,091) in view of Rashid (U.S. 2004/0230661), as applied to claim 13 above, and further in view of Aziz et al. (U.S. 6,779,016).

21. As to claim 16, Kisor teaches the computer instructions for sending the request received from the scheduler section to the process servers connected in response to polling accesses from the process servers (the central computer polls the remote computers as to time of day the remote computers will be available and transmits the task to the assigned remote computers, col. 2, lines 24-31; col. 3, line 61-col. 4, line 3).

The combination of Kisor and Rashid do not explicitly teach at least some of the process servers are connected to the center server through a firewall. However, Aziz teaches at least some of the process servers are connected to the center server through a firewall (each of the web servers coupled the load-balancer 112 and load-balancer 112 couple to a firewall, col. 2, lines 53-59).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of including at least some of the process servers are connected to the center server through a firewall as disclosed by Aziz into Kisor and Rashid's system because it would protect the web servers from unauthorized traffic.

22. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akashi et al. (U.S. 2002/0198924) in view of Rashid (U.S. 2004/0230661).

Akashi was cited in previous office action.

23. As to claim 12, Akashi teaches the invention substantially as claimed including: a job execution control method using a computer to schedule jobs and request execution of the jobs in a grid computing system (Fig. 1), comprising the steps of:

the computer (a computer cluster system, paragraph [0040]) assigning a job on the basis of the capacity of a process server constituting the grid computing the system (Fig. 1), stored in a storage, and executing a job of the jobs, regardless access type of the process server (cluster node characteristic information is held by the cluster scheduler 250, paragraph [0056]/ the cluster scheduler 150 has a function of assigning each process to one of the computers basic of the characteristics, paragraphs [0044], [0047], [0072] [0092]. Note that Akashi discloses assigning jobs for executing without mention the access type of the process server. Thus, Akashi teaches executing a job of the jobs, regardless access type of the process server).

the computer issuing a job execution request to the process server to which the job has been assigned (each of the cluster node schedulers 240-1 through 240-3) assigns each process to each of the processors (220-11 through 220-34) on the basis of the process assignment received, paragraph [0076] / each of the processors (220-11 through 220-12, . . . , 220-31 through 220-34) executes an assigned process, paragraphs [0070], [0076], and [0110]); and

the computer holding temporarily the issued job execution request (the cluster scheduler (250) sends process assignment information about a process to each of the cluster node schedulers (240-1 through 240-3), which hold information about the processes, paragraphs [0060] and [0076]) and sending the job execution requests to the process server to which the job has been assigned (the cluster node scheduler (250) and the cluster node schedulers (240-1 through 240-3) assigns each process to each of the processors (220-11 through 220-34)/ each of the processors (220-11 through 220-12, . . . , 220-31 through 220-34) executes an assigned process, paragraphs [0070], [0076], and [0110]).

Akashi does not explicitly teach sending the job execution requests to the process server to which the job has been assigned, depending on the operating status of the process server. However, Rashid teaches sending the job execution requests to the process server to which the job has been assigned, according to the access type of process server (at a scheduled time when the remote computer is available to operate, the central computer arranges to connect the remote computer and transfers the instruction and data for the remote computer to complete the task, col. 5, lines 45-53; and col. 6, lines 31-48 / the central computer polls the remote computers as to time of day the remote computers will be available and transmits the task to the assigned remote computers, col. 2, lines 24-30).

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Kisor does not explicitly teach sending the job execution request to process server according to the access type of the process server. However, Rashid teaches sending the job execution request to process server according to the access type of the process server (client protocol 206 enables various client applications 204 to invoke certain file system control operations on server 104 that provide some type of access to files within file storage 218. Access to files may include, for example, reading a file, updating a file, and creating a new file. Server protocol 214 responds to file system controls from client 102 by performing the requested tasks, col. 4, lines 55-61).

It would have been obvious to one of ordinary skill in the art at the time invention was made to incorporate the teaching of sending the job execution request to process server according to the access type of the process server as taught by Rashid into Kisor because the making use of pre-encoded rules (pushing and polling) into the notifications/tasks would eliminate the need for formatting or interpreting the data; thereby, improve system performance.

Response to Arguments

24. According to the amendment filed on 1/13/2011, Applicant has submitted a substitute specification with left-justification formatting and constant spacing, rendering the specification more legible, the substitute specification has been reviewed and accepted. No new matter is added; therefore, the objection is hereby withdrawn.

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25. In view of the amendment filed on 1/13/2011, the amendment to claims 1 and 4-16 overcome the objections to the claims; therefore the rejection has been withdrawn.

26. Applicant's arguments with respect to the rejection of claims 6-11 and 13-16 under 35 USC § 101 have been fully considered and persuasive, therefore, the rejection has been withdrawn.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAMQUY TRUONG whose telephone number is (571)272-3773. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emerson C. Puente can be reached on (571)272-3645. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Camquy Truong/

Examiner, Art Unit 2195

/Kenneth Tang/

Primary Examiner, Art Unit 2196

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